

# AVIATION

*The Oldest American Aeronautical Magazine*

MARCH 17, 1924

Issued Weekly

PRICE 10 CENTS



Ready to meet any enemy—Fighting Squadron One, Aircraft Squadrons, Battle Fleet

VOLUME  
XVI

## SPECIAL FEATURES

NUMBER  
11

SHUTTING DOWN THE AIRCRAFT INDUSTRY  
THRILLING STORY OF A RESCUE IN MID-AIR  
OFFICIAL WORLD RECORDS RECOGNIZED BY F.A.I.  
REVIEW OF BRITISH CIVIL AIR TRANSPORT SUBSIDIES

THE GARDNER, MOFFAT CO., INC.  
HIGHLAND, N. Y.  
225 FOURTH AVENUE, NEW YORK

COST

QUALITY



PERFORMANCE

MAINTENANCE

THESE FOUR CARDINAL VIRTUES  
HAVE NEVER BEFORE BEEN COMBINED TO SO CONSIDERABLE AN EXTENT AS IN THE

### BOEING PURSUIT

IN RECOGNITION OF THIS FACT THE UNITED STATES GOVERNMENT HAS INCLUDED A NUMBER  
OF THESE PLANES IN ITS PRESENT BUILDING PROGRAM

**BOEING AIRPLANE COMPANY**  
CONTRACTORS TO UNITED STATES GOVERNMENT  
GEORGETOWN STATION, SEATTLE, WASH.

## WE CAN DELIVER AIRPLANES, MOTORS, ACCESSORIES

The new L-55 Job Leads ..... \$3950.00  
The new L-5 Tourabout Job Leads ..... 2650.00  
The new L-5 Sportster Job Leads ..... 2650.00

### Fuelages

Months standard fuelages supplied with  
Cessna & 100 HP Blue engine (see 100 HP  
new markings) minimum 55 gal. and 100 gal.  
ready for motor and pump. \$100.00

New standard fuelages. Also motor complete,  
new tank, controls and new fuel in 100 gal.  
ready for motor and pump. \$100.00

New standard fuelages with 100 HP motor  
complete, new tank and controls and fuel  
in 100 gal. ready for motor. \$100.00

New standard fuelages with 100 HP motor  
complete, new tank and controls and fuel  
in 100 gal. ready for motor. \$100.00

Complete fuelages with 100 HP motor  
complete, new tank and controls and fuel  
in 100 gal. ready for motor. \$100.00

Complete fuelages with 100 HP motor  
complete, new tank and controls and fuel  
in 100 gal. ready for motor. \$100.00

Complete fuelages with 100 HP motor  
complete, new tank and controls and fuel  
in 100 gal. ready for motor. \$100.00

Complete fuelages with 100 HP motor  
complete, new tank and controls and fuel  
in 100 gal. ready for motor. \$100.00

Complete fuelages with 100 HP motor  
complete, new tank and controls and fuel  
in 100 gal. ready for motor. \$100.00



THE NEW L-5

100 HP Job Leads ..... \$3950.00  
100 HP Job Leads ..... \$3950.00  
100 HP Job Leads ..... \$3950.00

100 HP Job Leads ..... \$3950.00  
100 HP Job Leads ..... \$3950.00  
100 HP Job Leads ..... \$3950.00

100 HP Job Leads ..... \$3950.00  
100 HP Job Leads ..... \$3950.00  
100 HP Job Leads ..... \$3950.00

100 HP Job Leads ..... \$3950.00  
100 HP Job Leads ..... \$3950.00  
100 HP Job Leads ..... \$3950.00

### Equipment and Fittings

Standard, 100 HP Job Leads ..... \$475.00  
New 100 HP Job Leads ..... \$475.00  
New 100 HP Job Leads ..... \$475.00

100 HP Job Leads ..... \$475.00  
100 HP Job Leads ..... \$475.00  
100 HP Job Leads ..... \$475.00

100 HP Job Leads ..... \$475.00  
100 HP Job Leads ..... \$475.00  
100 HP Job Leads ..... \$475.00

100 HP Job Leads ..... \$475.00  
100 HP Job Leads ..... \$475.00  
100 HP Job Leads ..... \$475.00

100 HP Job Leads ..... \$475.00  
100 HP Job Leads ..... \$475.00  
100 HP Job Leads ..... \$475.00

100 HP Job Leads ..... \$475.00  
100 HP Job Leads ..... \$475.00  
100 HP Job Leads ..... \$475.00

MARCH 17, 1924

# AVIATION

VOL. XVI, NO. 11

Published every Monday

### CONTENTS

Editorials .....	281	Offert World Records Recognized by F.A.I. ....	280
Shooting Down the Aircraft Industry .....	282	This Week's Cover .....	285
Thrilling Record of Old Pioneer Driver .....	283	Entry Fees for Dayton Races .....	286
Evolution of British Airway Subsidies .....	284	Greyhound Co. Wins Patent Suit .....	288
Air Mail Pilot Possum Killed .....	284	Airports and Airways .....	289
Lt. F. V. Grant Wins Carsten Trophy .....	284	United States Air Force .....	291
Air in the Dictionary .....	284		

**THE GARDNER, MOFFAT COMPANY, Inc., Publishers**  
GENERAL AND EDITORIAL ROOMS: 225 FOURTH AVENUE, NEW YORK

PUBLISHED BY  
HIGHLAND, N. Y.

Subscription price: Four dollars per year. Single copies  
ten cents. Canada, for dollars. Foreign, six dollars  
a year. Copyright 1924, by the Gardner, Moffat Com-  
pany, Inc.

Issued every Monday. Terms close ten days previously.  
Entered as second-class matter Jan. 20, 1920, at the  
Post Office at Highland, N. Y., under act of March  
3, 1911.

# AVIATION

The only American Aircraft Weekly  
The oldest American Aircraft Magazine

### WILL SERVE YOU BEST because it

- is published for those who understand and have a definite interest in aviation.
- covers the news first and most thoroughly.
- prints first and often exclusive descriptions of new aircraft.
- is the only American publication in which the progress of aeronautics is covered each week.
- gives the greatest value of any aeronautical publication — 52 issues for \$4.00.

Start your subscription with the next issue.

### AVIATION

225 Fourth Avenue

New York

**LINCOLN STANDARD AIRCRAFT CORP. 2409 O St., Lincoln, Nebr.**

## PUBLISHER'S NEWS LETTER

Of course, the one subject apparent in the mind of a publisher of an aeronautical magazine is the rapidly dwindling number of aircraft constructors that have any business and who advertise. This week, as our readers will see, The Glenn L. Martin Co. for the first time since AVIATION was established, in 1916, is using a half page instead of a full page of advertising space. Curtiss has cancelled all advertising in aeronautical papers. With the L.W.F. plant shut down, Glenn Martin with no business, Thomas-Morse idle, Aeromarine struggling to keep going on experimental work, and all the others, with the possible exception of Boeing and Vought, wondering how long they can hold on, the publisher is confronted with a serious situation.

\* \* \* \*

A manufacturing plant can shut down during slack times, a business man can take a vacation, but a publication like a railroad has to keep running, or it is to meet its schedule. AVIATION is not alone in its troubles. All the other aeronautical papers have disappeared and we are informed that one of the seven papers represents a loss of \$50,000 in its short span for loss. The competition in the field has been completed by a number of other factors which will soon be made less serious. But our readers will probably be glad to know that even at great losses and without adequate encouragement from the industry we intend to "carry on" until the show clear of the present dark clouds.

\* \* \* \*

On another page will be found more about the practical shut-down of the aeronautical industry in the United States. This information may startle some of our foreign readers, whose

support and appreciative letters we value so highly. The English, French, German and even Russian aeronautical papers reflect the state of flying in these countries. Each of them contains page after page of announcements of these firms that supply the governments and even of those that don't but hope to. In this country, how different the situation can be seen at a glance. The trouble does not lie with the manufacturers. They have little or no business and their prospects are not bright. The whole trouble seems to lie in Washington, not necessarily with the officers of the Services, but with the system of land to mouth planning for our aerial national defense. If the five-year program that has been recommended were adopted by the Army Air Service hopes for the future might revive. Unfortunately, this report seems to be lost in records of War Department and tape. As will be seen from the Curtiss Company's report, competition in production and engineering by the Services, and the awarding of contracts below production cost has put the whole industry in a position where the plants are shut down or where contracts are let at prices giving little hope for even a reasonable profit.

\* \* \* \*

Such a condition cannot last. Two things are inevitable. Either the aeronautical industry will be forced into bankruptcy or else a shake-up will have to take place in the Washington situation. The officers in charge of government air services should act promptly and fearlessly. The National Aeronautic Association should use its strength to help "Make America first in the Air." The Aeronautical Chamber of Commerce should give the public facts and figures regarding the whole industry. Finally it is up to the President to awaken Congress to the peril of our aeronautical defencelessness both actual and potential.

L. D. GARDNER  
PRESIDENT  
V. D. MOTT  
VICE-PRESIDENT  
L. D. WINTER  
TREASURER  
GEORGE HENDERSON  
BUSINESS MANAGER

# AVIATION

LAMARCA & D'YON  
EDITORS  
VIRGINIA E. CLARK  
EDWARD P. WARDEN  
RALPH H. UNION  
CONTRIBUTING EDITOR

Vol. XVI

MARCH 17, 1924

No. 11

### Encouraging Gliding Experiments

LITTLE encouragement has been given in this country to the development of the glider or "sailplane." That this is so should be far more resented than it is in most countries, for it was the Wright brothers, with whom practical aviation began, who were the first to conduct successful gliding and hovering experiments with heavier-than-air craft. Interest in gliders here should be revived, not only for the descending sport such machines offer, but also for the scientific value of the data concerning the formation of air currents and means of mastering them that would be collected. The only way of starting up this new dormant interest is by means of attractive trophies and prizes. It is confidently believed that if such a stimulus were forthcoming, the idea of motorless flight would be taken up here as enthusiastically as it has been in Germany, France and England.

To show the extent of encouragement gliding experiments receive abroad it is sufficient to state that the prize money offered for the French aviation flight competition which was held last summer far exceeded that offered for the Pulitzer Trophy race in St. Louis. This is the more remarkable when it is considered that the markets entered in the St. Louis race cost many thousands of dollars whereas gliders can be built for a few hundred dollars.

While gliding experiments have lagged in France and in England since the successful development of the "light plane" type of aircraft—and partly because of it—in Germany experiments continue along the original line of thought. Apparently, the German experimenters do not consider the problem of motorless flight solved now that gliding with covering currents has been proved possible for hours at a stretch. On the contrary, they are now directing their efforts toward "fast soaring," that is, flying under the impetus of air currents of varying intensity and direction, which are mostly independent of the formation of the ground. This is an art as yet practically unknown, for which reason it is difficult to predict the results it may lead to. But the very fact that there is a sphere of aeronautical investigation virtually untouched should spur us to enter it. The country at the Wrights cannot afford to do less.

### On Lack of Cooperation

STATISTICS show that fatal air accidents occur much more frequently among a certain type of irresponsible flier than they do among those who are backed by responsible companies or among firms of those countries which have air navigational regulations.

There is no doubt that with the present lack of regulations

many small pilots are flying machines that have evolved their usefulness. Licensing has worked well in other countries. The public has a right to demand it, yet another session of Congress seems to be slipping by without the passing of federal air legislation.

From our contact with manufacturers and firms throughout the country we believe that they desire some sort of regulations. We also know that there is some violent opposition to the bills now before Congress. If the present session of Congress does not pass some form of air legislation it is entirely the fault of those interested in aeronautics. The present bills are not badly legislated; they are intended to lay down the rules of the game. There will be hearings on the bills. The opposition is a sad commentary on the lack of cooperation in the aeronautical field. How long will it be before those interested in flying will be able to unite for a common cause?

Air legislation will only result from some agreement of all those interested in the development of aeronautics, and this includes the industry from the largest organization to the one man shop, the national and local aero organizations, the air service and both the flier. It appears that in spite of every effort made by Congressmen Windsor to give everyone an opportunity to be heard the freight is untolerated as being severely untended. We urge that this subject be approached in a put-together spirit and not in one of suspicious hostility.

### All Honor to the Air Mail

THE wonderful record of efficiency and reliability of the United States Air Mail Service has set us comparing the mail day by day with, from New York to San Francisco has now lasted so long that it is generally accepted as a matter of course. What this record involves in the matter of uncomfortable flying, physical hardship and the will to win is seldom, if at all, realized by those not intimately in touch with the Air Mail. Few people appreciate what it means to fly the mail over the mountains—be it the Alleghenies or the Rockies—in winter time, with blinding snowstorms which blot out all landmarks and confused the ships until they lose all navigability. And yet, the Air Mail pilots "carry on" in weather no one else could fly as true to their slogan that "the Mail must go through."

It is only when one of them falls in the accomplishment of his duty, as Brooks Hyde Pearson did the other day, and others did before him, that we are brought to a full realization of the admirable expert air corps which makes the Air Mail Service. All honor to these peaceful soldiers of an unrelenting war against the forces of nature.









## Work of the Franco-Roumaine

The Compagnie Franco-Roumaine de Navigation Aérienne was founded on April 25, 1929, and during the last 500 months of that year operated an air service between Paris and Prague, a distance of 1,000 km.

In 1932, this line was opened from February to November and was extended to Warsaw, thus covering a distance of 3,000 km. The number of airplanes in commission was increased to 57 and that of the crew to 82.

In 1933, the company opened a new line, branching off the old line at Prague, and leading to E.E. to Vienna, Budapest, Prague, and finally to Constantinople. The system thus obtained a total length of 3,150 km. The total personnel was 280, the material comprised 64 airplanes and the number of engines was 330.

In 1933, the Franco-Roumaine extended their E.E. line to Belgrade, the system then covering 3,500 km. The number of airplanes increased practically the same, but the personnel was increased to 500 and the system to 144 power units. The number of kilometers covered by the airplanes also considerably increased, the highest figure being obtained in May, 1933, when the machines covered a distance of 185,526 km.

In spite of the length of the various stages (from 400-600 km, or 3-5 hr. non-stop flight) the number of landings has become almost negligible, accidents are extremely rare, the regularity of traffic is constantly improving and the financial position of the firm is much better.

The company has expressed the first eight air routes as the Belgrade-Budapest stage (600 km) and was the first to operate three-engine commercial planes. It is the oldest of these airlines, equipped with suitable ground organization, that has prevented the restriction of the night service.

The Franco-Roumaine's system is interesting from a political point of view. The fact that an almost daily connection is obtained between the French capital and the capitals of Czechoslovakia, Poland, Austria, Hungary, Yugoslavia, and Roumania, speaks for itself. The company has signed important agreements with all these states.

The commercial result is, of course, not what could be wished. Like every European company operating an air line, the Franco-Roumaine has to rely on state assistance.

Nevertheless, financial indications are decidedly encouraging. In 1933, the highest net operating income of the line was such that only two-fifths could be assigned. The machines are all loaded to their utmost capacity and the increase of freight from 1931 to 1933 was 147 per cent.

It is proposed to increase the rate considerably in 1934. The question is whether the paying mass will consent to pay still more for what they already consider dear, but it is not impossible if the increased rates are accompanied by an increase in service and in the quality of the service. This improvement is what the Franco-Roumaine is going to work for in 1934. They are going to try night flying, which, if carried out with sufficient safety, is certainly one of the best means of increasing the public's view of the enormous gain of time over the train.

The year 1934 will thus not be a new episode in the tale, by which passengers, mail and freight can leave Paris at 11 o'clock in the evening and arrive at Prague next morning, at Vienna, Vienna-Budapest by night, and at Belgrade in the evening, at Belgrade at nightfall, and finally to Constantinople the following morning. In this way aircraft on the Franco-Roumaine line will take one-third the time occupied by the slower means of transport.

## New Belgian Air Companies

Two new aviation companies have recently been formed in Belgium. The first is known as the S.O.C.A., or Société Océanique de Transports Aériens, the object of which is to transport living persons to localities in France or neighboring countries from whence they can fly back to Belgium for the purpose from which they are sent in favor of that country. The second of the new companies has a capital of 1,000,000 francs in 30,000 shares, is known as the Société des Aériens Océaniques, which in Belgium alone has a membership of 350,000.

To give an idea of the importance of the transport of persons in Belgium, it is known that 30 million persons are sent to France annually for retail purposes, and the advantage of sending them by air instead of by rail is considerable. In the first place the speed of transport by air is such that the birds are staged for a comparatively short time, and the cost of transport and the feeding of the birds is reduced to a minimum.

Similarly, the conditions for flying are extremely suitable for pigeon racing. Weather conditions, radio weather reports, the speed of the birds, and the reliability of the airframe for the purpose as compared to railway services where the birds are liable to damage from wires, other birds, etc., are all arguments in favor of air transport.

During the past year a Belgian airplane was specially fitted up for the transport of persons and operated with success by M. Chardon, and the experience gained from this venture has prompted the formation of the new company. The latter new company is the C.A.B., or Compagnie Belge, the purpose of which is to express aerial goods, supply and aerial survey work in Belgium and the Belgian Congo. The president of the C.A.B. is M. Fernand Jansin, president of the Belgian Aero Club.

## Moscow-Koenigsberg Air Traffic

The Derflatt company which operates the Koenigsberg-Berlin-Moscow commercial air service, lately issued a report on its operations during the past flying year, May to October, 1933. It appears from this report that the number of regular flights on this line was 190; total and additional flights 110, distance covered 212,000 km.; passengers carried 651; freight carried 543 tons, number of mailbags, one-thirty only, were air-mailed. All of which is a very good result. Of these one was due to lack of fuel owing to strong head winds, three were due to fog, and two to the arrest of the plane by the Lithuanian authorities at Kerno.

The report adds that the Lithuanians are very polite, but do obstruct the work of the Derflatt in every possible way, so that the planes have to complete the stage of 510 km. from Koenigsberg to Koenigsberg in a single flight. It is proposed, however, to alternate this solution by berthing an intermediate landing ground on Russian territory, either at Poland or at Dvinsk.

There has been no fatal accident during two years' operation of the line, and the reliability of the service is reckoned at 99 per cent. The number of accidents at present under control of the Derflatt all but one are in perfect order.

## Australian Airways

The Western Australian Airways, Ltd., recently detailed 200,000 dollars for flying on the weekly air mail service they operate between Perth, Derby, and Melbourne, and Sydney, Australia. The service between these two points, which are 1200 mi. distant from one another, is operated by British Empire planes. One of these ships, which completed 500 hr. flying without ever being grounded by a ground stop, and found to be perfectly airworthy, although some minor replacements were recommended.

The mail carrying contract of this firm was recently renewed by the Australian Minister of Defense.

## Italian Airway Plans

The first Italian airway over which a commercial service will be operated is from Turin to Trieste. The service will be run with complete cover the available areas and buses. At first, only mail and express matter will be carried, but it is proposed to carry passengers when the service will be well under way. The company charged with the operation of the service is the S.I.A. of Portofino, near Trieste.

## Constantinople-Angora Airway

Experiments are being made with a view to establishing an airmail service between Constantinople and Angora, a distance of 200 km. The route is being carried out with Junkers aeroplanes. The journey is expected to be completed in 1934, and is hoped to establish a regular service running three times a week.

# UNITED STATES AIR FORCES

## U. S. ARMY AIR SERVICE

### Central American Flight Finished

The Chief of Air Service has received a cablegram that the Air Service flight in the region of Central America has safely returned to Fort Huachuca, Arizona. The personnel is in excellent condition and they report an extremely successful trip.



2d. Air Service officers who made the Central American flight—(L. to R.) Lieut. Leiford Miller, pilot officer; Lt. Perry Warner, radio officer; Maj. Raymond Walsh, flight commander; Maj. Follett Bradley, assistant flight commander; Lieut. Frank F. Albright, wireless officer; and Lieut. Len L. Barry, navigation officer.

which by the large crowds of people who turned out to see them in all places which they visited.

During the course of the flight, photographs were taken of places which appeared to be worthy of consideration as landing fields. When completed, the data collected by the Army mission is such that it will be presented to the Government with a view to its use by that country in the establishment of an aerial mail service according to the system used in the United States.

The flight was composed of three airplanes, two Dillies, and a Martin Bomber. The Dillies were flown by Lieut. Leiford Miller in connection with army charting, and Lieut. Perry Warner in connection with army charting, and Maj. Raymond Walsh in connection with army charting.

The officers who composed the flight were as follows: Maj. Raymond Walsh, flight commander; Maj. Follett Bradley, assistant flight commander; Lieut. Frank F. Albright, wireless officer; and Lieut. Len L. Barry, navigation officer.

Lieut. John M. Clark, the advance officer of the flight, arranged for the itinerary, supplies, landing fields, and other details, including governmental cooperation in the various countries.

### Motion Picture Films and Slides for Education

To aid officers of the Air Service, Regular Army, on duty with Reserve and National Guard organizations in their instruction program, the Information Division, Office Chief of

Air Service, is prepared to forward to them slides and motion pictures, many of which will undoubtedly prove of great assistance in the work of building up their units. It is believed that the use of this material will aid greatly in the maintenance of morale and the creation of a feeling of pride in the Air Service and the National Guard organizations.



2d. Air Service officers who made the Central American flight—(L. to R.) Lieut. Leiford Miller, pilot officer; Lt. Perry Warner, radio officer; Maj. Raymond Walsh, flight commander; Maj. Follett Bradley, assistant flight commander; Lieut. Frank F. Albright, wireless officer; and Lieut. Len L. Barry, navigation officer.

Letters will be sent to all Air Service officers of the Regular Army, on duty with these organizations, enclosing them of the slides and photographs taken, with a list of the slides and films. Arrangements have been made to transport these slides and films on Government rail of leaving.

### Foot Flying over Imperial Valley District

On a field recently made from Rockwell Field, Calif., to Yuma, Ariz., for the purpose of transporting Lieut. L. E. Thomas, a Reserve officer, to Rockwell Field, Lieut. V. E. Egan, the pilot of the plane, made the round trip in 100 mi. in 10 min. 10 sec. The plane was a Curtiss J-1.

This plane is now the fact that it takes a railroad train practically a whole afternoon to cross the desert, and when one travels in the summer from a train side across the enormous stretch of water land is attended by considerable discomfort from the intense heat. Considering the great saving in time and the comfort experienced in traveling in the airplane in a cooler atmosphere the advantages of airplane travel are of great importance.

### Preparing for Summer Training Camps

In anticipation of work during the late spring and summer on Curtiss planes for National Guard and Training Camp units, the ships at the Fairchild Air Intermediate Depot, Ohio, have been manufacturing a considerable amount of Curtiss parts in order to keep on the stock as a supply to meet, and have also been figuring on special plan and features for manufacture of several Curtiss parts, the machine supply of which has been exhausted.









# radiators Lamblin

are used all over the world.

**Used on more than 10,000 Aircraft.**

*Filed in the annals of the following—Cape Codder, Bonanza, Zivko, Duxford, Pictorial, Grand de France, The World's Speed Record, The Aero Club, The French Cup 1921, The French Speed Record, The Italian Grand Cup, Coppa Zeno, 1923, The World's Altitude Record, etc.*

FOR PARTICULARS APPLY TO  
**ETABLISSEMENTS LAMBLIN** 36, Boulevard Bourdon, Neuilly-sur-Seine.

## NIGHT SKY ADVERTISING



Night Sky Advertising is operated exclusively in the United States by the Night Aero Advertising Corporation, who own all United States Letters Patent and pending, both in America and abroad, for

**Illuminated Advertising Signs used on Airplanes**

and will promptly and vigorously prosecute all infringements.

**NIGHT AERO ADVERTISING CORP.**  
352 SEVENTH AVENUE, NEW YORK CITY  
Phone 4154

## DOPES

PIGMENTED DOPES  
VARNISHES ENAMELS

### TITANINE

Reg. Trade Mark  
MADE BY  
**TITANINE, Inc.**  
UNION, UNION COUNTY, N. J.  
Contractors to U. S. Government

**SAFETY FIRST  
AIRPLANE CLOTH**  
Packed Tapes—All Widths  
**TESTED AND GUARANTEED**  
To Grade A Specification 16004C

**Immediate Delivery**  
**W. HARRIS THURSTON & CO., INC.**  
116 Franklin St. New York  
Telephone Franklin 1251  
Contractors to U. S. Army and Navy

## Gibbons Landing and Launching Devices

Will make it possible to establish practicable and safe landing places in the heart of every Town or City and upon Rocky Coasts and Large Ships.

*Covered by Domestic and Foreign Patents*

**DEPARTMENT OF AERONAUTICAL LANDING AND LAUNCHING DEVICES**

**THE GIBBONS COMPANY**  
OFFICE 318 COLUMBIA STREET, BROOKLYN, N. Y., U.S.A.

Established 1895  
Over half a century

Telephone  
Brooklyn 9648-6937

## INDEX TO ADVERTISERS

Continental Propeller & Mfg. Co.	299
Douglas Aircraft Co.	278
Edwards Aerial Survey Co.	290
Edwards Aerial Survey Co.	294
Edwards Aircraft Co.	299
Edwards, A. E., Jr.	299
Edwards Company, The	290
Edwards Manufacturing Co.	290
Edwards Aero Mfg. Co.	299
Edwards Aero Corp.	299
Edwards Aircraft & Supply Co.	295
Edwards, Arthur	290
Edwards, Establishment	299
Edwards Standard Aircraft Corp.	278
Edwards Exhibition Co., Inc.	290
Edwards, The Glenn L. Co.	297
Edwards Aero Advertising Corp.	299
Edwards Instrument Co.	299
Edwards, Matthew B.	299
Edwards Building House	299
Edwards, W. Harris & Co., Inc.	290
Edwards & Smith	299
Edwards, Inc.	290
Edwards Aircraft Co.	299
Edwards, Edward P.	299
Edwards in Fly.	294
Edwards Aircraft Corp.	299
Edwards Aircraft Co.	299



*Since 1909*

## For Human Locomotion

IN the "Outline of History," H. G. Wells writes that "by 1909 the aeroplane was available for human locomotion." It is an interesting coincidence that since 1909 exactly, The Glenn L. Martin Company has been building quality aircraft.

Without discounting the vital importance of airplanes in military and strictly governmental use, it seems certain that man's most useful exploitation of the air is destined to be as a medium for his own transportation in commerce and industry.

With this end in view, Martin Margins of Safety have not only been maintained since 1909 at an unusually high point, but are being steadily advanced today to new standards. Martin engineering practice is an ever-growing power for the improvement of human locomotion.

**THE GLENN L. MARTIN COMPANY**  
**CLEVELAND**

*Builders of Quality Aircraft since 1909*



# COMPACTNESS

The Wright T-3 Engine takes less space per horsepower, both in volume and frontal area, than any other engine. It is low, short and very narrow. Low frontal resistance is thus obtainable.

This compactness of the T engine gives the plane designers an excellent opportunity for close cowling on fast planes and considerable latitude for vision and general location on large or multi-engined planes.

WRIGHT AERONAUTICAL CORPORATION  
Paterson, New Jersey, U. S. A.



"The  
Ideal form: an of  
Incomparable  
Service"

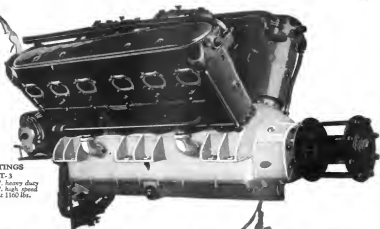


Installed in a U.S. Navy two place plane a Wright T engine took up less space than the smaller powered engine it replaced, gave the pilot better vision and also avoided structural complication, besides enabling the use of better streamlining and establishing improved performance. It fitted on the same engine bearers as originally installed for the lower powered engine.

#### RATINGS

T-3

250 H. P. heavy duty  
650 H. P. high speed  
Weight 1160 lbs.



# WRIGHT MODELS ENGINES